

L 10650-63

ACCESSION NR: AP3C01221

2

in several Sm sub 2 0 sub 3 melts were there new weak lines. Heat curves of unfused mixtures of cryolite - Sm sub 2 0 sub 3 indicated an endothermic reaction between components. "Spectral determination was carried out by V. L. Ginzburg. The participation of T. I. Khrarin in carrying out the work is acknowledged." Orig. art. has: 4 tables and 4 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova. Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of Sciences SSSR)

SUBMITTED: 11Aug62


DATE ACQD: 01Jul63

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NO REF SOV: 006

OTHER: 003

kes /   
Card 2/2

VOSKRESNSKAYA, N.K.; KRIVOVYAZOV, Ye.L.

Thermal effects of the exchange reactions of salts containing  
analogous ions with different charges. Zhur.neorg.khim. 7 no.10:  
2426-2433 0 '62. (MIRA 15:10)

1. Institut obshechey i neorgaincheskoy khimii imeni N.S.Kurnakova  
AN SSSR.

(Ion exchange) (Thermochemistry)

VOSKRESENSKAYA, N.K.; BUDOVA, G.P.

Reaction of  $Nb_2O_5$  with alkali and alkaline earth chlorides. Zhur.  
neorg.khim. 5 no.9:2051-2055 8 '60. (MIRA 13:11)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova  
Akademii nauk SSSR.  
(Niobium oxide) (Alkali metal chlorides) (Alkaline earth chlorides)

SOKOLOVA, I.D.; VOSKRESENSKAYA, N.K.

Surface tension of fused salts. Part 2: Surface tension of the systems  $\text{BaCl}_2$  -  $\text{NaCl}$ ,  $\text{K}_2\text{SO}_4$  -  $\text{NaBr}$ . Zhur.fiz.khim. 36 no.5: 955-961 My '62. (MIRA 15:8)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova, AN SSSR.

(Fused salts) (Systems (Chemistry)) (Surface tension)

VOSKRESENSKAYA, N.K.

Problems and tasks of Soviet inorganic chemistry in connection  
with the decisions of the 22nd Congress of the CPSU. Objectives  
of the study of fused salts in the light of the decisions of the  
22nd Congress of the CPSU. Zhur.neorg.khim. 7 no.4:709-711  
Ap '62. (MIRA 15:4)

(Salts) (Systems (Chemistry))

VOSKRESENSKAYA, N.K.; BERUL', S.I.

Conversions of  $\text{CeO}_2$ ,  $\text{Nd}_2\text{O}_3$ ,  $\text{Sm}_2\text{O}_3$  and their interaction with fused lithium and potassium chlorides and with sodium carbonate and sodium sulfate. Zhur.neorg.khim. 7 no.4:850-855 Ap '62. (MIRA 15:4)

1. Institut obshchey i neorganicheskoy khimii AN SSSR.  
(Rare earth oxides) (Salts)

37628

S/076/62/036/005/002/013  
B101/B110

5.4400

AUTHORS: Sokolova, I. D., and Voskresenskaya, N. K.  
TITLE: Surface tension of molten salts. II. Surface tension of the systems  $\text{BaCl}_2$  -  $\text{NaCl}$ ,  $\text{K}_2\text{SO}_4$  -  $\text{NaBr}$

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 5, 1962, 955 - 961

TEXT: The applicability of V. K. Semenchko's generalized moments theory (Poverkhnostnyye yavleniya v metallakh i splavakh (Surface phenomena in metals and melts) Gostekhizdat. M., 1957) to melts of the systems  $\text{BaCl}_2$  -  $\text{NaCl}$  (I), and  $\text{K}_2\text{SO}_4$  -  $\text{NaBr}$  (II), has been investigated. Systems II was compared with the data found by V. K. Semenchko, L. P. Shikhobalova (Zh. fiz. khimii, 21, 613, 707, 1387, 1947) for the system  $\text{Na}_2\text{SO}_4$  -  $\text{KBr}$ . The polytherms for the surface tension of both systems were taken by the maximum gas bubble pressure method with rising molar parts of  $\text{NaCl}$  or  $\text{NaBr}$ , respectively. The 960°C isotherm was plotted for system I, the 1070°C isotherm for II. The Guggenheim equation was found to hold for I, but II showed a major deviation from the value calculated. M. A. Reshetnikov's  
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Surface tension of molten...

S/076/62/036/005/002/013  
B101/B110

additivity equation, however, holds for both systems:  
 $\sigma = \sigma_1 + (\sigma_2 - \sigma_1)x/[x + K(1 - x)]$ , where  $\sigma_1, \sigma_2$  is the surface tension of the two pure salts,  $\sigma$  that of the mixture containing  $x$  molar parts of the second component.  $K$  is constant for the whole range  $x = 0 - 1$ .  $K = 0.74$  for the 960°C isotherm of system I,  $K = 0.54$  for system II (1070°C). Calculation of the adsorption of the surface-active component by the Gibbs equation gives an adsorption maximum of  $17 \cdot 10^{-11}$  g·mole/cm<sup>2</sup> corresponding to 0.4 molar parts of NaCl for I, and  $13 \cdot 10^{-11}$  g·mole/cm<sup>2</sup> corresponding to 0.35 molar parts of NaBr for II. The surface tension of the melts investigated obeys the generalized moments theory of Semchenko on the assumption that the ions  $Ba^{2+}$  and  $SO_4^{2-}$ , not the ions  $BaCl^+$  and  $KSO_4^-$ , prevail in the melt. The isotherms for the surface tension of the two diagonal cross sections of the mutual system Na, K||SO<sub>4</sub>, Br intersect in the point corresponding to the equivalent component ratio. There are 3 figures and 2 tables. The most important English-language reference is: J. S. Peake, M. R. Botwell, J. Amer. Chem. Soc., 76, 2656, 1954.

Card 2/3



Surface tension of molten...

S/076/62/036/005/002/013  
B101/B110

ASSOCIATION: Akademiya nauk SSSR, Institut obshchey i neorganicheskoy  
khimii im. N. S. Kurnakova (Academy of Sciences USSR,  
Institute of General and Inorganic Chemistry imeni  
N. S. Kurnakov)

SUBMITTED: July 8, 1960

Card 3/3

X

BUDOVA, G.P.; VOSKRESENSKAYA, N.K.

Reaction of niobium pentoxide with molten salts of some oxy acids.  
Zhur.neorg.khim. 6 no.6:1369-1374 Je '61. (MIRA 14:11)  
(Niobium oxide) (Acids)

SOKOLOVA, I.D.; KRIVOVYAZOV, Ye.L.; ~~VOSKRESENSKAYA, N.K.~~

Surface tension of alkali metaphosphates and alkaline earth metaphosphates. Zhur.neorg.khim. 8 no.12:2625-2630 D '63. (MIRA 17:9)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova AN SSSR.

VOSKRESENSKAYA, N.P., kand.biolog.nauk

On the way to artificial photosynthesis. Priroda 51 no.3:  
103-104 M. '62. (MIRA 15:3)

1. Institut fiziologii rasteniy im. K.A.Timiryazeva AN SSSR,  
Moskva.  
(Calvin, Melvin, 1912-) (Photosynthesis)

TSEL'NIKER, Yu.L.; VOSKRESENSKAYA, N.P.; OSIPOVA, O.P.

Leonid Aleksandrovich Ivanov; obituary. Izv.AN SSSR.Ser.biol.27  
no.4:651-652 J1-Ag '62. (MIRA 15:9)  
(IVANOV, LEONID ALEKSANDROVICH, 1871-1962)

VOSKRESENSKAYA, N. P. Card. Biolog. Sci.

Dissertation: "Concerning the Effect of Cations (Potassium, Calcium and Sodium) on the Intensity of Photosynthesis." Inst of Physiology of Plants imeni K. A. Timiryazev, 11 Apr 47.

SO: Vechernyaya Moskva, Apr, 1947 (Project #17836)

VOSKRESENSKAYA, N. P.

PA 43/43T40

USSR/Medicine - Photosynthesis  
Medicine - Potassium

11 Jan 1948

"Importance of the Potassium Cation for Photosynthesis," N. P. Voskresenskaya, Inst Plant Physiol imeni K. A. Timiryazev, Acad Sci USSR, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

Conducted experiments to explain significance of potassium, calcium, and sodium to growth. Exposure to these minerals was of short duration. Conducted studies on 20-day barley. Calcium showed negative effect on photosynthesis. Submitted by Academician N. A. Maksimov, 3 Oct 1947.

43T40

PA 78T48

USSR/Medicine - Plants, Physiology  
Medicine - Light, Effects

Jun 1948

"Nitrogen Supply and the Light Adaptation of Plants,"  
N. P. Voskresenskaya, A. A. Nichiporovich, Inst of  
Physiol of Plants imeni K. A. Timiryazev, Acad Sci  
USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LX, No 8

Conducted tests to determine methods to adapt plants  
for growth under conditions of dim light. Submitted  
by Acad N. A. Maksimov 9 Apr 1948.

78T48



VOSKRESENSKAYA, N. P.

USSR/Medicine - Chlorophyll  
Medicine - Biochemistry

Jul 49

"The Influence of Nitrogenous Alimentation and Light on the Accumulation of Organic Matter and the Quality of Chlorophyll A and B in Lettuce," N. P. Voskresenskaya, Inst of Plant Physiol Imeni K. A. Timiryazev, Acad Sci USSR, 3 3/4 pp

"Dok Ak Nauk SSSR" Vol LXVII, No 1

Based on compiled data, author observed that: Change in the nitrogen-feeding level produced a change in the total amount of green pigments in proportion to exposures to normal light, and high level moderately lowered the plant's accumulation of an organic mass when exposed to less light. This phenomenon is due to increased photosynthesis in weak light where nitrogen content is increased. Submitted by Acad N. A. Maksimov 9 May 49.

54/49710

CA

11D

Effect of wave length of light on carbohydrate formation and protein formation in the leaf. N. P. Viskreschchaya. *Doklady Akad. Nauk S.S.S.R.* 72: 173-6 (1960).  
Irradiation of kidney bean, corn or sunflower plants with 500-700 mμ (18,000 ergs/sq. cm./sec.) or 450 Å mμ (30,000 ergs/sq. cm./sec.) blocking filters, showed that the blue light caused much less total matter accumulation than the red light, especially for corn and sunflower. Carbohydrate accumulation in all cases lagged behind total dry matter growth, although red light was more effective than blue. When CO<sub>2</sub> supply was cut off and protein synthesis was forced to be a secondary process, neither blue nor red light brought about any significant protein synthesis; in sunflower a decline was observed. Hence protein synthesis can occur only in the presence of photosynthetic activity, i.e. in presence of CO<sub>2</sub>, and is favored by blue light.  
G. M. Kosolapoff

VOSKRESENSKAYA, N. P.

USSR/Biology - Photosynthesis

1 Jul 51

"Reduction of Nitrates in Leaves Under Various Conditions of Illumination," N. P. Voskresenskaya, Inst of Plant Physiol imeni K. A. Timiryazev, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXIX, No 1, pp 165-168

Sections from leaves of sunflower and corn were infiltrated with 0.02 M  $\text{KNO}_3$ . Expts on this material showed that presence of  $\text{CO}_2$  is necessary for the reduction of  $\text{NO}_3$  in leaves, i.e., this process is connected with photosynthesis. The special compn of light does not affect the reduction of  $\text{NO}_3$ , but the intensity of the light has a strong influence on it.

21076

VOSKRESENSKAYA, M.P.

Photosynthesis

Effect of the spectral composition of light on the proportion of substances formed during photosynthesis. Dokl. AN SSSR 86 no. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952, UNCLASSIFIED



VOSKRESENSKAYA, N. P.

Chemical. Abst.  
Vol. 48 No. 9  
May 10, 1954  
Biological Chemistry

① 2  
The significance of spectral composition of light in photo-synthetic formation of substances. N. P. Voskresenskaya. Doklady Akad. Nauk S.S.S.R. 93, 911-14 (1953); C.A. 47, 2281g. Expts. with sunflower plants exposed to a  $^{14}\text{O}_2$ -contg. atm. in the presence of light of different spectral characteristics are described. In the 1st 90 sec. of photosynthesis  $\text{C}^{14}$  is found largely in substances that are adsorbed by proteins and ion-exchange materials. In red light this fraction of products declined on longer light exposure. Apparently the first few sec. serve to form carboxylated derivs. of active groups of proteins, which continues until the capacity of protein is said. The beginning of synthesis proper is signified by a rise in total and specific radioactivity of protein, more pronounced in blue than in red light. In red light the carbohydrate fraction exceeds that formed in blue illumination after longer than 90-sec. exposures by a large margin. G. M. Kozlov

YOSKHESENSKAYA, N.P.

Effect of the light's spectral composition on the intensity of photosynthesis. Trudy Inst.fiziol.rast. 10:129-138 '55. (MLRA 8:9)

1. Institut fiziologii rasteniy im. K.A. Timiryazeva Akademii nauk SSSR. (Photosynthesis)

*Formation of organic acids and amino acids in photo-synthesis in various conditions of illumination* N. P. Vorkhinskaya (K. A. Timiryazev Inst. Plant Physiol. Moscow). *Fiziol. Rastenii* 1, 49-57 (1954).—In 50 sec. illumination  $C^{14}$  from labeled  $CO_2$  is found mostly in aspartic acid and alanine with higher degree of incorporation if the light is in the blue end of the spectrum. The identity of amino and carboxylic acids is the same with red or blue light exposures. Expts. with tobacco and kidney beans showed also that malic acid predominates in  $C^{14}$  content among the carboxylic acids. Carboxylic acids show relatively low  $C^{14}$  content in exposures to the blue end of the spectrum owing to their transformation into the amino acids.  
G. M. Kozlovskii



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APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020017-5"

NICHIPOROVICH, A.A., with ANDREYEVA, T.F., VOSKRESENSKAYA, N.P.,

"Different Ways of Transformation of Carbon Assimilated by Plants in  
the Process of Photosynthesis,"

paper presented at Intl. Conf. on Uses of Radioisotopes in Scientific Research  
(UNESCO) Paris, 9-20 Sept 1957

AUTHORS:

Voskresenskaya, N. P. , Zak, Ye. G.

20-2-39/60

TITLE:

On Oxygen Absorption by Plant Leaves in Various Spectral Regions (O pogloshchenii kisloroda list'yami rasteniy v raznykh uchastkakh spektra)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp. 375-378 (USSR)

ABSTRACT:

Absorption of CO<sub>2</sub> carbon into different organic compounds in accordance with the processes of photosynthesis is not equal for the short-wave range and the long-wave range of the spectrum of physiological radiation. Some indirect data suggest as cause for this the change in the oxidation-reduction regime of the photosynthesizing cells under different conditions of exposure. The intensification of the synthesis of albumen and of amino acids, the accumulation of organic acids during experiments of long duration, and the shift of the points of compensation of the photosynthesis into the direction of stronger exposure to light in the short-wave radiation range permit the assumption that under these conditions

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On Oxygen Absorption by Plant Leaves in Various Spectral Regions 20-2-39/60

the intensification of the process of oxidation takes place which can be connected with the activation of the absorption of oxygen by the leaf. The paper under review describes an attempt of directly measuring the velocity of absorption of oxygen by the leaves under short-wave and long-wave radiation: 400 - 580 m ("blue light") and 580 - 700 m ("red light"). The comparison of the activities of absorption was conducted (also in darkness) manometrically with the aid of the Warburg apparatus at 25°. For purposes of a direct determination of the velocity of absorption, the photosynthesis would have to be eliminated; such an elimination by application of poisons has not been entirely successful. Therefore the authors of the paper under review carried out their investigations with ethiolated material as well as with such spots of the plant forms that were free of chlorophyll. On basis of the results obtained it is possible to speak of the existence of differences in the oxidizing-reducing regime of the leaves if they are exposed to long-wave or short-wave light. These differences manifested themselves as different velocities of absorption of oxygen. It appears that the carotinoids and endoxidases (flavoproteins) as

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On Oxygen Absorption by Plant Leaves in Various Spectral Regions 20-2-39/60

well as the cytochrome system were responsible for the increase in absorption. Although these results were obtained with regard to parts of leaves that were not green, this may hold valid also for green leaves. Thus it can be assumed that the intensification of the absorption of oxygen at exposure to blue light is based on this photochemical reaction, i.e. on the absorption of light of this sector by the photoactive ferments of the breathing systems, together with the carotinoids. As results of the photochemical reaction that yields additional energy to the above systems, they must be activated. In the case investigated by the authors of the present paper, this circumstance probably favored the intensification of absorption by the cell both of the atmospheric oxygen as well as of the oxygen produced during the process of the photosynthesis. There are 1 figure, 4 tables, and 14 references, 7 of which are Slavic.

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On Oxygen Absorption by Plant Leaves in Various Spectral Regions 20-2-39/60

ASSOCIATION: Institute of Plant Physiology im. K. A. Timiryazev, AS USSR  
(Institut fiziologii rasteniy imeni K. A. Timiryazeva Akademii nauk SSSR)

PRESENTED: March 5, 1957, by A. L. Kursanov, Academician

SUBMITTED: March 5, 1957

AVAILABLE: Library of Congress

Card 4/4

VOSKRESENSKAYA, N.P.; GRISHINA, G.S.

Problem of the prolonged action of different spectral components of light on plants [with summary in English]. Fiziol. rast. 5 no.2: 147-155 Mr-Apr '58. (MIRA 11:4)

1. Institut fiziologii rasteniy im. K.A. Timiryazeva AN SSSR, Moskva. (Plants, Effect of light on)

VOSEKRESNENSKAYA, N. P.

KURCHIKOVA, A. A. and VOSEKRESNENSKAYA, N. P.

"Effect of Radiation in Various Wavelength Regions on Plant Composition."  
Paper submitted for the Int'l Botanical Congress, Montreal, Canada, 19-29 Aug 1959.  
Tsiadrasov Inst. of Plant Physiology, Academy of Sciences U.S.S.R., Moscow.



17(4)

AUTHORS: Voskresenskaya, H. P., Grishina, G. S. SOV/20-124-2-64/71

TITLE: On the Effect of Intensity of Spectral Composition of Radiation Upon Metabolism and Harvest (O deystvii intensivnosti i spektral'nogo sostava radiatsii na obmen veshchestv i urozhay)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 2, pp 469 - 472 (USSR)

ABSTRACT: The differences in the ways of assimilation of carbon forming in the case of photosynthesis in different sections of the spectrum have an influence upon the entire metabolism of plants. Short-wave radiation favors the accumulation of nitrogen compounds in the leaves. A similar phenomenon is also observed in the case of a reduction of the light intensity. It is therefore not certain which changes of metabolism, among them of nitrogen metabolism, are specific of light of different spectral composition and what phenomena can be explained by the difference of intensity of light. Data concerning this problem are extremely scarce (Refs 1-3). For the purpose of investigating the subject mentioned in the

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On the Effect of Intensity of Spectral Composition  
of Radiation Upon Metabolism and Harvest

SOV/20-124-2-64/71

title the authors bred beans of the type triumph (Triumpf) in a dark room illuminated with 30 w luminescence lamps with "red" and "blue" light (Table 1). After 20-25 days of uninterrupted illumination the authors had to give up an investigation because of the damage the plants had suffered (Ref 4). Since that time the plants were not exposed to light for 6 hours daily. Result: the affections did no more occur. Blue light had a highly inhibiting effect upon the longitudinal growth of the plants (Ref 3). The period of blossoming and the duration were in the case of both colors of light mainly due to the influence of the intensity of light. Blue light had a much more favorable effect upon blossoming and the harvest of legumes. No results were determined with respect to the absolute quantity of the harvest since a part of the legumes remained green (unripe) under red and blue light. Table 2 shows much more the relative rapidity of legume formation. In the case of a high nitrogen content in the leaves under both colors of light the percentage was higher in the case of blue light (Table 3). The protein content in the leaves was in blue light always higher than in red light.

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On the Effect of Intensity of Spectral Composition of SOV/20-124-2-64/71  
Radiation Upon Metabolism and Harvest

In the case of red light it remained the same no matter what light intensities were used, in blue light, however, it dropped with the intensity being higher (data of references 1, 2, 5, 6, confirmed). Table 4 gives the protein nitrogen content in the seeds. Unexpectedly, the protein content was somewhat lower under blue light than under red lamps. The activity of the cytochrome system was higher in the case of leaves exposed to blue light. The increased capacity of accumulation of the nitrogen compounds and the protein synthesis lead to the acceleration of ripening and a greater harvest of bean seeds. The results are of interest for plant ecology, in particular for the leaves of the lower stages. - There are 2 figures, 4 tables, and 11 references, 5 of which are Soviet.

ASSOCIATION:

Institut fiziologii rasteniy im. K. A. Timiryazeva Akademii nauk SSSR (Institute for Plant Physiology imeni K.A. Timiryazev of the Academy of Sciences, USSR)

PRESENTED:

September 17, 1958, by A. L. Kursanov, Academician

SUBMITTED:

September 6, 1958

Card 3/3

VOSKRESENSKAYA, N. P.

K.A. Timiriazev Institute of Plant Physiology, USSR Academy of Sciences, Moscow.

"Effect of various rays of the visible part of the spectrum on oxygen consumption by green and non-green leaves."

paper submitted for the Third Intl. Congress on Photobiology, Copenhagen, 31 July - 5 August 1960.

VOSKRESENSKAYA, N.P.; GRISHINA, G.S.

Oxygen absorption by green leaves as related to the intensity  
and spectral composition of light. *Fiziol. rast.* 7 no. 5:497-  
506 '60. (MIRA 13:10)

1. K.A. Timiriachev Institute of Plant Physiology, U.S.S.R.,  
Academy of Sciences, Moscow.

(Plants, Effect of light on)

(Plants--Respiration)

VOSKRESENSKAYA, N. P., (USSR) GRISHINA, G. S.

"Reduction of CO<sub>2</sub> in Various Parts of the Spectrum  
in the Presence of Certain Oxidizing Agents."

Report presented at the 5th Int'l. Biochemistry Congress,  
Moscow, 10-16 Aug 1961.

S/026/61/000/004/001/002  
A166/A127

AUTHOR: Voskresenskaya, N.P., Candidate of Biological  
Sciences

TITLE: The Artificial Synthesis of Chlorophyll

PERIODICAL: Priroda, no. 4, 1961, 83-85

TEXT: The authors described the importance of chlorophyll in photosynthesis and discuss the recent successful experiments on synthesizing chlorophyll, carried out independently by teams of American and West German scientists. In view of the uses of chlorophyll in medicine, and especially for the healing of wounds, synthesis of chlorophyll on an industrial scale could do much to reduce the cost of the product. Furthermore, more light will be shed on the mechanism of photosynthesis. Academician A.P. Vinogradov has demonstrated that the oxygen secreted by a plant in light originates from the decomposition of water into oxygen and hydrogen with the help of the energy of the light which the plant assimilates in the presence of chlorophyll. The process is very involved and en-

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The Artificial Synthesis of Chlorophyll

8/026/61/000/004/001/002  
A166/A127

tails the participation of other highly-active substances in the green leaf. Further experiments have shown that photosynthesis also depends on the proper organization of the component substances in space, i.e., within the structure of the leaf. Chlorophyll is contained in the leaf in the form of chloroplasts which also contain active enzyme catalysts in a photoactive complex. The full structure of the chloroplast has not yet been completely studied, and attempts to reproduce photosynthesis outside the leaf have failed. Individual photosynthetic reactions have, however, been reproduced in isolated chloroplasts exposed to light. Oxygen secretion has been noted, but a corresponding absence of organic synthesis from carbon dioxide. In other cases organic synthesis is present but oxygen secretion not. There is 1 diagram.

ASSOCIATION: Institut fiziologii rasteniy im. K.A. Timiryazeva  
AN SSSR (Institute of Plant Physiology im. K.A.  
Timiryazev, AS USSR), Moscow.

Card 2/2



VOSKPESENSKAYA, N.P.

Chlorella. Priroda 50 no.7:119 J1 '61.

(MIRA 14:6)

1. Institut fiziologii rasteniy im. K.A. Timiryazeva AN SSSR.  
(Algae)

VOSKRESENSKAYA, N.P.; GRISHINA, G.S.

Significance of light in nitrite reduction in a green leaf. Fiziol.  
rast. 9 no.1:7-15 '62. (MIRA 15:3)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy  
of Sciences, Moscow.  
(Plants, Effect of light on) (Nitrogen metabolism)

28118  
S/O20/62/144/004/023/024  
B144/B138

17.1156  
27.1110  
AUTHORS:

Voskresenskaya, N. P., and Grishina, G. S.

TITLE:

Photosynthetic competition between CO<sub>2</sub> and some other oxidizers in various spectral regions

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 4, 1962, 922-925

TEXT: The effect of oxidizers (sulfates, nitrates, nitrites) on photosynthesis was studied to elucidate the differences in assimilation of CO<sub>2</sub> in various spectral regions. CO<sub>2</sub> reduction is presumably effected by a photochemical reducing agent (R). After complete removal of H<sub>2</sub>O from the intercellular system in the dark photosynthesis was measured: (1) on 10 cm<sup>2</sup> segments of tobacco plants irradiated for 2 - 5 min with Hg quartz lamps and incandescent lamps in a chamber containing 1.5% of C<sup>14</sup>O<sub>2</sub> and subsequently fixed in 85% ethanol. Irradiation was not strong enough to bring about saturation photosynthesis. (2) Colorimetrically on undivided

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S/020/62/144/004/023/024  
B144/B138

Photosynthetic competition...

beet leaves exposed to red or blue light of luminescent lamps.  $H_2O$  (controls) and solutions of the salts were introduced into the leaves by vacuum infiltration. The inhibition of  $C^{14}O_2$  assimilation was independent of osmotic effects and constant at concentrations of 0.0075 - 0.0025 M for  $NO_2$ , and 0.01 - 0.0025 M for  $SO_4$  and  $NO_3$ . This is indicative of a competition between  $CO_2$  and these oxidizers in the reduction process. Short-wave light inhibited the photosynthesis to a greater extent than did long-wave light. When  $NO_2$  was administered without preliminary removal of  $H_2O$  from the intercellular system, fixation was reduced after 3 - 4 min in blue light only. When  $NO_2$  was introduced into beet leaves still connected with the plant after removal of  $H_2O$  from the intercellular system within 1.5 hrs, photosynthesis remained unchanged in red light, but was reduced to 70% in blue light. This can be attributed neither to the short time of action nor to the absence of  $NO_2$  reduction.

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86-00513R001861020017

VIYL', Yu.A. [Vil, J.]; VOSKRESENSKAYA, N.P.

Effect of light on the biosynthesis of tryptophan in the green  
seedlings of barley. Fiziol.rast. 12 no.6:990-997 N-D '65.  
(MIRA 18:12)

1. Institut eksperimental'noy biologii AN Estonskoy SSR i  
Institut fiziologii rasteniy imeni K.A.Timiryazeva AN SSSR,  
Moskva. Submitted February 8, 1965.

KUTYURIN, V.M.; VOSKRESENSKAYA, N.P.; ULUBEKOVA, M.V.; GRISHINA, G.S.;  
ZADOROZHNYI, I.K.

Effect of the spectral composition of light on the fractionation of oxygen isotopes during its absorption by water plants. Fiziol. rast. 11 no.1:7-12 Ja-F '64.

(MIRA 17:2)

1. Institut ~~geo~~khimii i analitičeskoy khimii imeni  
Vernadskogo AN SSSR i Institut fiziologii rasteniy imeni  
K.A. Timiryazeva Akademii nauk SSSR, Moskva.

VOSKRESENSKAYA, N. P.

"On the question of the absorption of oxygen by green plants in light."

paper presented at 4th Intl Photobiology, Cong, Oxford, UK, 26-30 Jul 64.

Inst of Plant Physiology im K. A. Timiryazev, AS USSR, Moscow.

GRISHINA, G.S.; VOSKRESENSKAYA, N.P.

Light dependence of oxygen absorption by chloroplasts (Mehler reaction). Dokl. AN SSSR 151 no.2:452-455 J1 '63 (MIRA 16:7)

1. Institut fiziologii rasteniy im. K.A.Timiryazeva AN SSSR.  
Predstavleno akademikom A.L.Kursanovym.  
(Chromatophores) (Plants, Effect of light on)  
(Plants, Effect of oxygen on)



VOSKRESENSKAYA, N.P.; GRISHINA, G.S.

Some peculiarities of the absorption of oxygen by green leaves in  
the light. Fiziol. rast. 8 no.6:726-733 '61. (MIRA 16:7)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy  
of Sciences, Moscow.  
(Photosynthesis) (Plants—Respiration)

"APPROVED FOR RELEASE: 03/14/2001

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APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020017-5"

VOSKRESENSKAYA, Natal'ya Petrovna; NICHIPOROVICH, A.A., prof.,  
otv. red.; GRISHINA, G.S., red.

[Photosynthesis and the spectral composition of light]  
Fotosintez i spektral'nyi sostav sveta. Moskva, Nauka,  
1965. 308 p. (MIRA 18:10)

VOSKRESENSKAYA, N.T.; ZVEREVA, N.F.; RIVKINA, L.L.

Spectrochemical determination of gold in silicate rocks and minerals. Zhur. anal. khim. 20 no.12,1288-1298 '65.

(MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.  
Submitted May 15, 1964.

VOSKRESENSKAYA, N.T.; TITKOVA, N.F.; SHULYAKOVSKAYA, N.S.; TSZIN' TSUY-IN  
[Chin TS'ui-ying]

Geochemistry of thallium, rubidium, and lithium in igneous processes  
Geokhimiia no.3:249-258 '62. (MIRA 15:4)

1. Department of Geochemistry of the Lomonosov State University,  
Moscow.  
(Caucasus, Northern--Metals, Rare and minor) (Geochemistry)

VOSKRESENSKAYA, N.T.

Thallium in some hydrothermal deposits of the Greater Caucasus.  
Geokhimiya no.8:676-683 '61. (MIRA 17:3)

1. Kafedra geokhimii Moskovskogo gosudarstvennogo universiteta imeni  
Lomonosova.

RAYEVSKAYA, E.S.; ZHUK, I., red.; VOSKRESENSKAYA, T., red.;  
NEZNAPOV, V., mladshiy red.; NOGINA, N., tekhn. red.

[Studies on the history of economic thought in Hungary]  
Ocharki istorii ekonomicheskoi mysli Vengrii. Moskva, Sot-  
sekgiz, 1962. 211 p. Translated from the Hungarian.  
(Hungary---Economics) (MIRA 15:9)



TUCHINSKIY, Naum Vladimirovich; LAVROV, Gleb Aleksandrovich; ZAYTSKY, Nikolay Petrovich; KARATYGIN, A.M., dotsent, kand.tekhn.nauk, retsenzent; VOSKRASENSKIY, H.H., inzh., red.; TAIROVA, A.L., red.izd-va; CHERNOVA, Z.I., tekhn.red.

[Technology of printing-machinery manufacture] Tekhnologiya poligraficheskogo mashinostroeniia. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1960. 376 p. (MIRA 13:7)  
(Printing machinery and supplies)

VOSKRESENSKAYA, N.T.

Form in which uranium occurs in coals. Part 1: Extraction  
of uranium from coal by various solvents. Izv. AN Kir. SSR.  
Ser. est. i tekhn. nauk 2 no.5:49-56 '60. (MIRA 13:9)  
(Uranium)

VOSKRESENSKAYA, N.T.; SOBOLEVA, L.T.

More on thallium in manganese minerals. Geokhimiia no. 3:276-278  
'61. (MIRA 14:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova,  
Geologicheskii fakul'tet, kafedra geokhimii.  
(Dzhezdinskiy—Manganese ores) (Thallium)

VOSKRESENSKAYA, N.T.

Form in which uranium occurs in coals. Part 2: Reaction of  
humic acids with uranyl salts. Izv. AN Kir. SSR. Ser. est.  
1 tekhn. nauk 2 no.5:57-64 '60. (MIRA 13:9)  
(Uranyl salts) (Humic acid)

VOSKRESENSKAYA, N.T.

Thallium concentration in magmatic rocks of the Greater Caucasus and  
some other regions of the U.S.S.R. Geokhimiia no.7:573-583 '61.  
(MIRA 14:6)

1.Chair of Geochemistry, M.V.Lomonosov State University, Moscow.  
(Thallium) (Rocks, Igneous)

*Voskresenskaya, N.T.*

VOSKRESENSKAYA, N.T.; USEVICH, T.D.

Occurrence of thallium in manganese minerals [with summary in English].  
Geokhimiia no.7:606-614 '57. (MIRA 11:1)

1. Moskovskiy gosudarstvennyy universitet, kafedra Geokhimi.  
(Thallium) (Manganese ores)

32-24-4-5/67

AUTHOR: Voskresenskaya, N.T.  
 TITLE: The Colorimetric Determination of Thallium With Brilliant Green  
 in Rocks and Ores (Kolorimetriceskoye opredeleniye talliya s  
 brilliantovym zelenym v porodakh i rudakh)  
 PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 4, pp. 395-398 (USSR)

ABSTRACT: The method of determination mentioned is based upon the reaction  
 between  $TlBr_4$  and the cation of brilliant green. The reaction is  
 very sensitive and the color obtained is stable. It is possible  
 to determine the color intensity and the concentration of thallium  
 either photometrically or visually by means of a number of stan-  
 dard samples. Determination can be carried out with an accuracy of  
 3-5%, except in the case of very low thallium concentrations when  
 the error limit rises up to 20%. The separation of the thallium  
 complex from disturbing anions such as  $SbCl_6^-$ ,  $SbBr_6^-$ ,  $SnCl_4^{2-}$ ,  
 $SnBr_4^{2-}$ ,  $HgBr_4^{2-}$ ,  $CdBr_4^{2-}$ ,  $ClO_4^-$ ,  $Cr_2O_7^{2-}$ ,  $CrO_4^{2-}$ ,  $WO_4^{2-}$ ,  $CNS^-$  and  
 cations such as Pb, Fe, Zn, Cu, in the presence of which a

Card 1/2

The Colorimetric Determination of Thallium With  
Brilliant Green in Rocks and Ores

32-24-4-5/67

slightly yellowish-green coloring is produced, is carried out by extraction with ether. Colorimetrization should be carried out in a 0.1n hydrochloric acid medium as hydrobromic acid with time reacts with brilliant green. By experiments carried out with radioactive thallium-204 it was found that in black ash more than 10% thallium volatilizes, whereas this is not the case in the decomposition with hydrofluoric acid, and that it is possible to separate lead from thallium in galenite in an acid medium as sulfate. 200 samples with 1/100 000 and 1/1000% thallium were investigated and no considerable deviations were noticed in parallel determinations. An exact process of analysis as well as tables showing results are given. There are 3 tables, and 7 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova  
(Moscow State University imeni M.V.Lomonosov)

1. Rock---Analysis
2. Ores---Analysis
3. Thallium--Determination
4. Colorimetry---Applications

Card 2/2



VOSKRESENSKAYA, N.T.; ZVEREVA, N.F.; VEYMARN, A.B.

Geochemistry of copper in the Devonian and Carboniferous  
effusives of Karkalinsk District (central Kazakhstan).  
Vest.Mosk.un.Ser.4:Geol. 20 no.5:57-61 S-O '65.

(MIRA 18:11)

1. Kafedra geokhimii Moskovskogo gosudarstvennogo universiteta.

VOSKRESENSKAYA, N.T.; TIMOFEYEVA, N.V.; TOPKHANA, M.

Thallium in some minerals and rocks of sedimentary genesis.  
Geokhimiia no.8:737-741 '62. (MIRA 15:9)

1. Kafedra geokhimii Moskovskogo gosudarstvennogo  
universiteta imeni Lomonosova.  
(Thallium)

S/007/61/000/007/002/004  
B103/B217

AUTHOR: Voskresenskaya, N. T.

TITLE: Thallium content in magmatic rocks of the Greater Caucasus and some other regions of the USSR

PERIODICAL: Geokhimiya, no. 7, 1961, 573-583

TEXT: The author gives a critical revision and exact definition of data on thallium distribution in magmatic rocks, as well as its behavior in the magmatic process in the North Caucasus which looks back to a long-lasting geological history. She regarded this study as necessary since the problem of average thallium content in the individual eruptive types has not yet been solved in spite of numerous publications. From a survey of published data the author establishes considerable differences in the knowledge of the thallium content in ultrabasic, basic, and intermediate rocks. Besides magmatic complexes, she also studied the respective ore occurrences. She devoted a special paper (Ref. 17: Geokhimiya, No.8, 1961) to the thallium content in hydrothermal deposits. The thallium content was colorimetrically determined by means of brilliant green.

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S/007/61/000/007/002/004  
B103/B217

Thallium content in magmatic rocks ...

Weighed-in rock portions of 1 - 10 g were disintegrated by HF, and the fluorides removed by evaporation with HCl. Disturbing elements were separated from Tl: (1) in ultrabasic and basic rocks by extraction with ether from a 1 N HBr solution (Ref. 3: N.T.Voskresenskaya, Zavodsk. laboratoriya, 24,395,1958); (2) in intermediate and acid rocks by cementation on copper (Ref. 18: I.A.Blyum, Zavodsk. laboratoriya 23,283,1957). On the strength of data obtained, the author detects that the Tl distribution in magmatic rocks of the Greater Caucasus obeys one of the geochemical basic laws for thallium: (A) Its content increases from ultrabasic to basic and acid rocks. Serpentine with a Tl content almost double as high as in the basic rocks form an exception. The author explains this by the peculiarities of serpentinization where thallium is introduced which then localizes in sulfides. (B) The effusives are richer in Tl as compared with their intrusive analogs. (C) The Tl content of the Neogene intrusion in the region of Kavkazskiy Mineral'nyye Vody is increased (in agreement to statements made in Ref. 17). The Tl binding to acid rocks is a consequence of its geochemical nature. The so-called "northern" microcline (north of the Musht river) (Tl content  $1.1 \cdot 10^{-4}\%$ ) and entirely or partly microclinized old granites ( $9.0 \cdot 10^{-4}\%$  Tl) of the

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Thallium content in magmatic rocks ...

S/007/61/000/007/002/004  
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main Caucasus range are relatively rich in thallium, and contain up to four times as much as the initial biotite granites. Some thallium was introduced into the former during potassium metasomatism. The author also found the average Tl content in acid rocks of the intrusive and effusive facies of the Greater Caucasus to be  $1.0 \cdot 10^{-4}\%$ . The reason of some contents above and below this average could not be thoroughly clarified. The majority of rocks from other regions of the USSR and from abroad analyzed for comparison had a Tl content similar to that of the North Caucasus. Several rocks showed, however, a higher content (from Ukraine, East Transbaikalia, and Saxony). The higher Tl content of the German granites (E. Preuss, Ref. 14: Zs. Angew. Min. 3, 1940) is assumed to be due to superimposed processes. The higher values of the Tl content in the fundamental work by D.M. Shaw et al. (Ref. 2: Geochim. et Cosmochim. Acta 2, No. 2, 1952) cannot be regarded as average data for acid rocks, since they are derived from not quite representative rocks (granites from Finland). From papers published after 1952 the author draws the conclusion that her own data on the average Tl content are convincing. Finally, she determined the Tl content in ultrabasic, intermediate, and alkaline rocks from other regions of the USSR, and observed that the Tl content in the

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S/007/61/000/007/002/004  
B103/B217

Thallium content in magmatic rocks ....

ultrabasic rocks is double as high as that of the data obtained by Shaw (Ref. 2). She explains this by the serpentinization of some rocks, and considers her own data not quite accurate and, therefore, not final. Also in basic rocks the author obtained a higher Tl content than Shaw, whose content, however, well agrees with that found by Preuss. Gabbro amphibolite had the highest Tl content. Alkaline rocks displayed the most considerable deviation from the Tl values:  $0.8 \cdot 10^{-4}\%$  (author) compared with D.M. Shaw (Ref. 1):  $1.4 \cdot 10^{-4}\%$  and  $3.6 \cdot 10^{-4}\%$ , and B.I. Zlobin (Ref. 16: Geokhimiya No. 5, 1958)  $1.9 \cdot 10^{-4}\%$ . The author explains these deviations by the different genesis and mineral composition of these rocks. In the transition from ultrabasic to basic and acid rocks, the Tl content rises gradually in contrast to the rapid change observed by Shaw. The author explains this by the average thallium content in acid rocks determined by Shaw which is too high. The author calculated the average Tl content in the magmatic rocks of the Caucasus with  $0.52 \cdot 10^{-4}\%$ , and of the USSR with  $0.75 \cdot 10^{-4}\%$  with respect to the territorial distribution according to Ref. 21 (S.P. Solov'yev, Rasprostraneniye magmaticheskikh gornyx porod v SSSR (Distribution of magmatic rocks in the USSR). Gosgeoltekhizdat, M., 1952). She states that the average Tl content in the magmatic rocks of

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Thallium content in magmatic rocks ...

S/007/61/000/007/002/004  
B103/B217

the USSR is approximately half as high as that detected by Shaw for the entire crust of the earth. According to her opinion, the Tl content in acid rocks affects the average Tl content in magmatic rocks. This is the reason of the divergence between the author's data and those found by Shaw. The author mentions papers by: V. V. Ivanov, L. V. Tauson and N. N. Buzayev, A. M. Demin and D. N. Khitarov, L. N. Kogarko, N. V. Koronovskiy, N. F. Titkova, N. S. Shulyakovskaya, and the analysts: Su Shou-t'ien, Chin Ts'ui-ying, E. E. Senderov. L. T. Soboleva, L. N. Soboleva. There are 1 figure, 7 tables, and 22 references: 14 Soviet-bloc and 8 non-Soviet-bloc.

ASSOCIATION: Kafedra geokhimii, Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Department of Geochemistry, Moscow State University imeni M. V. Lomonosov)

SUBMITTED: January 9, 1961

Card 5/5

VOSKRESENSKAYA, N.T.; SU SHOU-TYAN' [Su Shou-t'ien]

Geochemistry of alkaline elements and thallium in the Musht granites  
(Northern Caucasus). Geokhimiia no. 6, 500-507 '61. (MIR' 14:6)

1. Department of Geochemistry M.V. Lomonosov State University,  
Moscow.

(Musht Valley--Granite) (Thallium) (Alkali metals)



VOSKRESENSKAYA, N.T.; KORONOVSKIY, N.V.; TITKOVA, N.F.; SHULYAKOVSKAYA, N.S.

Alkali elements and thallium in effusive rocks of the Northern  
Caucasus and their petrogenetic significance. Vest. Mosk. un.  
Ser. 4: Geol. 15 no.4:21-28 Jl-Ag '60. (MIRA 13:10)

1. Kafedra geokhimii Moskovskogo universiteta.  
(Caucasus, Northern--Rocks, Igneous)

BORISHANSKAYA, S.S.; VOSKRESENSKAYA, N.T.; KARPOVA, I.S.

Mineral shape of thallium in spalerites of the Verkhnyaya Kvaysa deposit. Nauch.dokl.vys.shkoly; geol.-nauki no.4:135-136 '58.  
(MIRA 12:6)

1. Moskovskiy universitet, geologicheskoy fakul'tet, kafedra mineralogii i geokhimii.  
(Caucasus--Thallium) (Caucasus--Sphalerite)

3(8)

AUTHOR:

Voskresenskaya, N. T.

SOV/7-59-6-2/17

TITLE:

The Geochemistry of Thallium and Rubidium in Igneous Rocks

PERIODICAL:

Geokhimiya, 1959, Nr 6, pp 495 - 504 (USSR)

ABSTRACT:

Ahrens suggested the Rb/Tl-ratio as geochemical indicator (Refs 2 and 4). This ratio is, however, not constant for an intrusion for the binding of the  $Tl^{+1}$  is more polar and its compounds are much more volatile than those of  $Rb^{+1}$ , especially the halides (Table 7). An example for this are the rocks of the younger magmatic core of Tyrny-Auz (Northern Caucasus). The average chemical composition of the rocks according to Z. V. Studenikova, S. P. Solov'yev, and L. A. Vardanyants is given (Table 2). Table 1 shows the Rb and Tl-contents in the leucocratic granitoids in porphyroid biotite granites (Eldzhurtu granites) and in the liparites. The content in individual minerals of biotite granites was also determined. The considerable change in the Rb/Tl-ratio due to lime contact (Table 3) or subsequent hydrothermal effects is clearly observable. Fluctuations in the Rb/Tl-ratio were also found in quartz albite-phyrene of the Kvaisi (Gruzinskaya SSR) lead zinc deposit (Table 4). L. N. Soboleva made a chemical and petrographical

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The Geochemistry of Thallium and Rubidium in Igneous Rocks SOV/7-59-6-2/17

investigation. They are also due to a hydrothermal effect. In the course of the investigation of old granitoids of Baksan (Table 6) an important deviation from the rocks of the young magmatic core was found to exist. A distinction from the old rocks of the Glavnyy khrebet in the south-western part of the area of Tyrny-Auz is possible with the aid of the Rb/Tl-ratio. The author thanks Z. V. Studenikova and G. Nesterenko for investigation material and advice with respect to geology and petrography of Tyrny-Auz, Corresponding Member AS USSR G. D. Afanas'yev, N. V. Koronovskiy, and Ye. Ye. Milanovskiy for revising the article and for their notes. Papers by L. V. Tauson, A. V. Pek, V. V. Lyakhovich, A. S. Povarennykh, L. N. Kogarko are mentioned. There are 7 tables and 18 references, 12 of which are Soviet.

ASSOCIATION: Kafedra geokhimii Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Chair of Geochemistry of Moscow State University imeni M. V. Lomonosov)

SUBMITTED: December 16, 1958

Card 2/2



VOSKRESENSKAYA, N.T.

~~Colorimetric determination of thallium in rocks and ores using brilliant green.~~ Zav.lab. 24 no.4:395-398 '58. (MIRA 11:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.  
(Thallium--Analysis) (Chemical tests and reagents)  
(Colorimetry)

1 ml of bromine water then diluted to 10 ml with

AUTHORS: Voskresenskaya, N. T., Karpova, I. S. SOV/7-58-5-4/15

TITLE: Thallium in the Ore Minerals of the Verkhnyaya Kvaysa (Taliy v rudnykh mineralakh Verkhney Kvaysy)

PERIODICAL: Geokhimiya, 1958, Nr 5, pp. 435 - 440 (USSR)

ABSTRACT: The main ores of the Verkhnyaya Kvaysa are sphalerite and galenite. A peculiarity of these deposits is that the "collomorphic" structure is located above the crystalline one; i.e., that the minerals were separated from colloidal solution. Calcite is the accompanying mineral. The authors determined the thallium content colorimetrically with brilliant green in altogether 40 samples of sphalerite, galenite, marcasite, oxidized ore and concentrates (the results are mentioned in table 1). The change of the thallium content in galenite was investigated (partly also in sphalerite) in the falling (Table 2) and the striking (Table 3) of the ore. Table 4 gives the results obtained in the investigation of two cross-sections of the ore vein (Diagram 1). The collomorphic sphalerites and marcasites have a higher thallium content than crystallized lead glance (Diagram 1). This

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Thallium in the Ore Minerals of the Verkhnyaya Kvaysa SOV/7-58-5-4/15

is explained by the separation from colloidal solution: lead glance crystallized and on this occasion purified from the impurities carried along.

In sphalerite a special thallium mineral, the hutchinsonite, occurs (Ref 9). The elements Pb, Cu, Ag, Tl forming this mineral cannot substitute zinc isomorphically; they were also precipitated with the zinc sulfide gel and then formed micro inclusions. The thallium content and the content of arsenic - antimony in galenite shows a correlation (Fig 2). Therefore the following compensation may be assumed:  $2 \text{Pb}^{2+} \rightarrow \text{Tl}^{+} - \text{As}^{+3}$  or

$2 \text{Pb}^{2+} \rightarrow \text{Tl}^{+} - \text{Sb}^{3+}$ . No bismuth is found in the galenites of Verkhnyaya Kvaysa. There are 2 figures, 4 tables, and 9 references, 7 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.M.V.Lomonosova,  
kafedra Geokhimii (Moscow State University imeni M.V.Lomonosov,  
Chair of Geochemistry)

SUBMITTED: April 25, 1958  
Card 2/2

"APPROVED FOR RELEASE: 03/14/2001

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CIA-RDP86-00513R001861020017-5"

SAMULYLOV, Ye.V.; VOSKRESENSKAYA, N.V.

Attraction type interaction potentials between K - K, Cs -  
Cs, C - O atoms forming molecules in the ground state. Teplofiz.  
vys. temp. 3 no.3:376-380 My-Je '65. (MIRA 18:8)

1. Energeticheskiy institut imeni G.M. Krzhizhanovskogo AN SSSR.

L 11903-66 ENT(m)/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP6001908

UR/0294/65/003/006/0851/0859

AUTHOR: Samuylov, Ye.V.; Voskresenskaya, N.V.

ORG: Institute of Energetics im. G.M. Krzhizhanovskiy (Energeticheskii institut)

TITLE: Reaction cross section of carbon and oxygen atoms

SOURCE: Teplofizika vysokikh temperatur, v.3, no.6, 1965, 851-859

TOPIC TAGS: particle cross section, carbon, oxygen

ABSTRACT: The article presents the results of the calculation of 18 types of reaction potentials for carbon and oxygen atoms, converging to the fundamental dissociation limit. Based on data on the potentials, calculations were made by kinetic theory of the effective reaction cross sections of carbon and oxygen atoms for  $s$  from 1 to 3,  $\lambda$  less than or equal to  $s$ , and for temperatures from 1000 to 10,000°K. Atoms of carbon and oxygen can interact at various potentials corresponding to different types of energy levels of the carbon monoxide molecule. The latter can be determined according to the rules for combination of the orbital and spin moments of the atoms, as well as by comparison of the electronic configurations of the molecules. The article presents calculations of 18 different types of interaction in tabular form. It is concluded that

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UDC: 539.186.3

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ACC NR: AP6001908

the effective reaction cross sections of oxygen, carbon, and nitrogen atoms reacting with an oxygen atom increase with a decrease in the atomic number of the element since, with a decrease in the atomic number, the mean radius of the electron shell increases. Orig. art. has: 10 formulas, 2 figures, and 5 tables.

SUB CODE: 20/ SUBM DATE: 06Feb65/ ORIG REF: 005/ OTH REF: 023

CC  
Card 2/2

L 43156-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG/GD  
ACC NR: AT6022642 SCURCE CODE: UR/0000/66/000/000/0025/0029

AUTHOR: Samuylov, Ye. V.; Voskresenskaya, N. V.

ORG: none

TITLE: Attractive-type interaction potentials between Li-Li atoms in ground states

SOURCE: AN SSSR. Energeticheskiy institut. Issledovaniya po fizicheskoy gazodina-  
mike (Studies of physical gas dynamics). Moscow, Izd-vo Nauka, 1966, 25-29

TOPIC TAGS: lithium, ground state, potential energy, quantum number

ABSTRACT: A method is proposed for calculating the curves of attractive-type interaction potentials for the case where the rotational constant  $B_v$  is expressed in the form of a power series in  $(v + 1/2)$  (where  $v$  is the vibrational quantum number) including the second power of  $(v + 1/2)$ . Results of calculations of attractive-type potentials between Li-Li atoms in ground states are also given. For the Li-Li interaction, attractive curves with and without consideration of the second power of  $(v + 1/2)$  in the series for  $B_v$  were calculated.  $r_{min}$  and  $r_{max}$  were obtained for all values of the vibrational quantum number from  $v = 0$  to  $v = v_{max}$  ( $v_{max}$  being the maximum value of the vibrational quantum number at which the molecule is stable). Orig. art. has: 1 table and 17 formulas.

SUB CODE: 20/ SUBM DATE: 31Feb66/ ORIG REF: 001/ OTH REF: 006

Card 1/1 MLP

L 45434-66 ENT(1)/ENT(m)/ENP(j)/T DS/WW/JW/GD/RM

ACC NR: AT6022640

SOURCE CODE: UR/0000/66/000/000/0003/0013

AUTHOR: Rozhdestvenskiy, I. B.; Tsitelauri, N. N.; Voskresenskaya, N. V.; Samuylov, Ye. V.

ORG: none

80  
EPI

TITLE: Morse potential parameters for C-C, C-O, C-N interactions

SOURCE: AN SSSR. Energeticheskiy institut. Issledovaniya po fizicheskoy gazodinamike  
(Studies of physical gas dynamics). Moscow, Izd-vo Nauka, 1966, 3-13

TOPIC TAGS: atomic structure, molecular theory, molecular interaction, potential energy, *high temperature research*

ABSTRACT: The interactions of atoms with an unsaturated electron shell at high temperatures are well described with the aid of the Morse potential function. Previous works (1961-1962) calculated the second virial coefficient, the collision integrals, effective sections, and collision angles for this potential. In 1961 Morse potential parameters were determined for certain non-polar molecules, as well as for N-N, O-O, and N-O interactions by means of potential curves with a minimum. The present work estimates the values for the Morse potential parameters for the interactions of atoms in biatomic molecules, such as C<sub>2</sub>, CO, CN. Low electron state potential energy curves previously found for C<sub>2</sub> (in 1962) and CO (in 1960) were used to determine the parameters in the cases of C<sub>2</sub> and CO. Here the potential curves for certain of the inter-

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actions of C and N atoms of the CN molecule are determined. The parameters of the Morse potential are (1) energy of disassociation, calculated from the minimum on the potential curve, (2) the balance distance between atoms, and (3) Beta, which is the ratio of the oscillation and rotation constants for the beatomic molecule. Org. art. has: 8 formulas, 9 tables, and 1 figure.

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